

IN THE CLAIMS

1. **(currently amended)** A noise canceling method comprising the steps of:
receiving a specific signal having a specified time position, amplitude and phase;
recognizing a noise distribution of the specific signal;
predicting a noise by comparing noise components of a pair of copied frequencies with each other and extracting a frequency band having a larger noise component from a the pair of copied frequencies generated by insertion of the specific signal; and

reproducing a transmitted original signal by canceling the predicted noise from a reception signal.

2. **(original)** The noise canceling method as claimed in claim 1, wherein said specific signal is a zero point signal having an amplitude of zero, and the zero point signal is periodically inserted into the transmitted original signal.

3. **(currently amended)** A noise canceling method comprising the steps of:
receiving a reception signal containing a specific signal and a no-transmission energy section during which no periodical transmission is made, the specific signal having a specified time position, amplitude and phase;
extracting a noise component from the specific signal of the reception signal,
interpolation-predicting a noise of a data signal point, and canceling a noise of a specific band by removing the predicted noise from the reception signal; and

recognizing a noise distribution of the no-transmission energy section of the reception signal, predicting a noise by comparing noise components of a pair of copied frequencies with each other and extracting a frequency band having a larger noise component from a the pair of copied frequencies generated by insertion of the specific signal, and canceling a large level noise by removing the predicted noise from the reception signal.

4. **(original)** The noise canceling method as claimed in claim 3, wherein said specific signal is a zero point signal having an amplitude of zero, and the zero point signal is periodically inserted into the transmitted original signal.

5. **(currently amended)** A noise canceling method comprising the steps of:

receiving, by a reception side, a reception signal containing a specific signal and a no-transmission energy section during which no periodical transmission is made, the specific signal having a specified time position, amplitude and phase;

investigating a noise distribution of the reception signal during the no-transmission energy section;

notifying a transmission side of the investigated noise distribution;

changing, by the transmission side, an order of channels based on the noise distribution notified by the reception side so that channels having a large noise are gathered in a specific band;

sending a signal subjected to the channel change to the reception side;

restoring, by the reception side, the order of channels, which has been changed by the transmission side, to an original order;

extracting a noise component of a specific band from the specific signal of the reception signal having channels in the restored order;

interpolation-predicting a ~~noise~~ noise of a data signal point; and

canceling a noise of the specific band by removing the interpolation-predicted noise from the reception signal.

6. **(original)** The noise canceling method as claimed in claim 5, wherein said specific signal is a zero point signal having an amplitude of zero, and the zero point signal is periodically inserted into the transmitted original signal.

7. **(currently amended)** A noise canceling apparatus comprising:

means for receiving a specific signal having a specified time position, amplitude and phase;

means for recognizing a noise distribution of the specific signal;

means for predicting a noise by comparing noise components of a pair of copied frequencies with each other and extracting a frequency band having a larger noise component from a the pair of copied frequencies generated by insertion of the specific signal; and

means for reproducing a transmitted original signal by canceling the predicted noise from a reception signal.

8. **(original)** The noise canceling apparatus as claimed in claim 7, wherein said specific signal is a zero point signal having an amplitude of zero, and the zero point signal is periodically inserted into the transmitted original signal.

9. **(currently amended)** A noise canceling apparatus comprising:

~~mans~~ means for receiving a reception signal containing a specific signal and a no-transmission energy section during which no periodical transmission is made, the specific signal having a specified time position, amplitude and phase;

means for extracting a noise component from the specific signal of the reception signal, interpolation-predicting a noise of a data signal point, and canceling a noise of a specific band by removing the predicted noise from the reception signal; and

means for recognizing a noise distribution of the no-transmission energy section of the reception signal, predicting a noise by comparing noise components of a pair of copied frequencies with each other and extracting a frequency band having a larger noise component from a the pair of copied frequencies generated by insertion of the specific signal, and canceling a large level noise by removing the predicted noise from the reception signal.

10. **(original)** The noise canceling apparatus as claimed in claim 9, wherein said specific signal is a zero point signal having an amplitude of zero, and the zero point signal is periodically inserted into the transmitted original signal.

11. **(original)** The noise canceling apparatus as claimed in claim 9, wherein said means for recognizing a noise distribution comprises means for transforming the reception signal during the no-transmission energy section by a fast Fourier transformation method.

12. **(currently amended)** A noise canceling apparatus comprising:

means, provided on a reception side, for receiving a reception signal containing a specific signal and a no-transmission energy section during which no periodical transmission is made, the specific signal having a specified time position, amplitude and phase;

means, provided on the reception side, for investigating a noise distribution of the reception signal during the no-transmission energy section;

means, provided on the reception side, for notifying a transmission side of the investigated noise distribution;

means, provided on a transmission side, for changing, by the transmission side, an order of channels based on the noise distribution notified by the reception side so that channels having a large noise are gathered in a specific band;

means, provided on the transmission side, for sending a signal subjected to the channel change to the reception side;

means, provided on the reception side, for restoring the order of channels, which has been changed by the transmission side, to an original order;

means, provided on the reception side, for extracting a noise component of a specific band from the specific signal of the reception signal having channels in the restored order;

means, provided on the reception side, for interpolation-predicting a ~~noise~~ noise of a data signal point; and

means, provided on the reception side, for canceling a noise of the specific band by removing the interpolation-predicted noise from the reception signal.

13. **(original)** The noise canceling apparatus as claimed in claim 12, wherein said specific signal is a zero point signal having an amplitude of zero, and the zero point signal is periodically inserted into the transmitted original signal.

14. **(original)** The noise canceling apparatus as claimed in claim 12, wherein said means for investigating a noise distribution comprises a low-pass filter and means for demodulating the reception signal during the no-transmission energy section on an individual frequency band basis.